

**REMARKS**

At the time of the Office Action dated July 28, 2004, claims 1-3 and 7-12 were pending. Of those claims, claims 7-10 have been withdrawn from consideration pursuant to the provisions of 37 C.F.R. §1.142(b). Applicants acknowledge, with appreciation, the Examiner's allowance of claims 1-3 and 12.

**Claim 11 has been rejected under 35 U.S.C. §103(a) as being unpatentable over Fukutomi et al. in view of Lee et al.**

In the statement of the rejection, the Examiner admitted that Fukutomi et al. fails to teach a circuit board, recited in claim 11. Then, the Examiner relied on Lee et al., asserting that the reference teaches the missing feature, and concluding that it would have been obvious to modify Fukutomi's device based on the teachings of Lee et al. so that desired dimensions and flexibility can be achieved in Fukutomi's device. This rejection is respectfully traversed.

Applicants submits that the Examiner has not established a *prima facie* basis to deny patentability to the claimed invention under 35 U.S.C. §103 for lack of the requisite factual basis. To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974).

Based on the above legal tenet, Applicants submit that the proposed combination Fukutomi et al. and Lee et al. does not teach or suggest a semiconductor device including all the limitations recited in claim 11. Specifically, the proposed combination does not teach a semiconductor device including an adhesive layer extending "outward relative to and

completely all the way around the primary surface of said semiconductor element without reaching an outer edge of the primary surface of said circuit board” (emphasis added).

In paragraph 4 of the Office Action, the Examiner stated that a die-boding tape 4' shown in Figs. 11 and 12 corresponds to the claimed adhesive layer. However, it is not clear as to whether Fukutomi et al. shows that the die-boding tape 4' extends outward completely all the way around the surface of a polyimide film 19 (or 20). In this respect, the Examiner said, “see a cross-sectional view in one direction showing 3, 4' and the LS in Fig[s]. 11d and 12d” (emphasis added), admitting that the figures of Fukutomi et al. do not show the die-boding tape 4' extends outward completely all the way around the surface of a polyimide film 19 (or 20). Moreover, the description of Fukutomi et al. is silent as to whether the die-bonding tape 4' extends outward completely all the way around the surface. For example, Fukutomi et al. merely states, “For bonding the LSI chips, die-bonding tapes 4' for semiconductors were used” (column 13, line 67 to column 14, line 1).

Therefore, there is no reason to interpret that Fukutomi et al. discloses the claimed adhesive layer. In other words, the Examiner did not provide any technical evidence showing, and the proposed combination does not teach, the reason why the die-bonding tape 4' should extend outward completely all the way around the surface of the polyimide film 19.

Furthermore, it is well settled that the problem addressed and solved by a claimed invention must be given consideration in resolving the ultimate legal conclusion of obviousness under 35 U.S.C. §103. *North American Vaccine, Inc. v. American Cyanamid Co.*, 7 F.3d 1571, 28 USPQ2d 1333 (Fed. Cir. 1993); *Northern Telecom, Inc. v. Datapoint*

*Corp.*, 908 F.2d 931, 15 USPQ2d 1321 (Fed. Cir. 1990); *In re Newell*, 891 F.2d 899, 13 USPQ2d 1248 (Fed. Cir. 1989); *In re Nomiya*, 509 F.2d 566, 184 USPQ 607 (CCPA 1975).

The present invention addresses the problem caused by stress due to a difference in thermal expansion coefficients of elements constituting a semiconductor device (see page 2, lines 17-25 of the specification). The claimed adhesive layer extending “outward completely all the way around the primary surface of said semiconductor element” is an answer to solve the problem. This problem is not even on Fukutomi’s package and Lee’s package. Accordingly, under the circumstances of this case, the problem addressed and solved by the claimed invention constitutes a potent indicium of nonobviousness.

Based upon the foregoing, Applicants submit that the Examiner has not established a *prima facie* basis to deny patentability to the claimed invention for lack of the requisite factual basis. Further, upon giving due consideration to the problem addressed and solved by the claimed invention as an indicium of non-obviousness, the conclusion appears inescapable that one having ordinary skill in the art would not have found the claimed invention as a whole obvious within the meaning of 35 U.S.C. §103. *Jones v. Hardy*, 727 F.2d 1524, 220 USPQ 1021 (Fed. Cir. 1984).

Applicants, therefore, submit that the imposed rejection of claim 11 under 35 U.S.C. §103 for obviousness predicated upon Fukutomi et al. in view of Lee et al. is not factually viable and, hence, respectfully solicit withdrawal thereof.

### **Conclusion.**

Accordingly, it is urged that the application is in condition for allowance, an indication of which is respectfully solicited. If there are any outstanding issues that might

be resolved by an interview or an Examiner's amendment, Examiner is requested to call Applicants' attorney at the telephone number shown below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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Recognition under 37 C.F.R. 10.9(b)

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